



INTERNATIONAL ASSOCIATION FOR DANUBE RESEARCH

Scientific Report 2018

The activity of the IAD expert groups focuses on acquiring scientific knowledge to fill in some of the existing gaps and on fostering the dialogue with the policy makers and stakeholders of the Danube River Basin, with the aim to promote environmental conservation.

Science – Policy interactions

The dialogue with policy makers was fostered mainly in the frame of the cooperation with the International Commission for the Protection of the Danube Region (ICPDR) and the contribution to the implementation of the EU Strategy for the Danube Region (EUSDR).

The IAD provides scientific input to the ICPDR Expert Groups in several fields: River Basin Management, Hydromorphology, Microbiology, Invasive Alien Species, Sturgeon conservation, coordinating also some of the planned activities during the Joint Danube Survey 4 (e.g microbiology, environmental DNA sampling).

In the frame of the EU Strategy for the Danube Region, IAD contributes mostly via the Danube Sturgeon Task Force (DSTF) and the Danube network for Invasive Alien Species (DIAS). Currently, in the EUSDR there are 4 flagship projects where IAD members are involved: Sturgeon 2020 (EUSDR PA 6), Danube: Future (EUSDR PA 7), DREAM (EUSDR PA 7), DANUBIUS (EUSDR PA 7).

IAD contributed to the European Sturgeon Conference organized in July 2018 in the frame of the Austrian Presidency of the European Council. The conference led further to a consolidated version of a pan-European Sturgeon Action Plan, adopted in November 2018 under the Bern Convention, strengthening the sturgeon conservation across the whole Europe.

IAD partners from AT, RO, RS contribute with specific limnological studies and data analyses to the feasibility study to re-establish fish passage at Iron Gates (We Pass) coordinated by the International Commission for the Protection of the Danube River (ICPDR).

Through their activities, the IAD members play an important role in the implementation of the EU environmental directives and international conventions devoted to biodiversity conservation, such as Water Framework Directive, Birds and Habitats Directives, Bonn Convention, Bern Convention, Convention on the Biological Diversity, etc.

Project implementation

Projects are an important tool for the implementation of EU environmental policies and nature conservation actions. Therefore, the IAD members are actively involved in the development and implementation of different scientific projects in the Danube Region.

In 2018, IAD had an important input to the following projects:

- Managing and restoring aquatic ecological corridors for migratory fish species in the Danube River Basin (MEASURES)
- Developing an E-learning tool for Environmental Education for Primary and Secondary School in the Lower Danube Region (ELEDAN)
- River Ecosystem Service Index (RESI)
- Integrated platform for land and water monitoring based on remote and in situ measurements (RISE),
- Enhancing ecosystem services mapping for policy and decision making (ESMERALDA),
- Improving future ecosystem benefits through earth observations (ECOPOTENTIAL),
- Restoration of sterlet populations in the Austrian Danube (LIFE Sterlet)
- Eutrophication process assessment in Danube floodplain water bodies using satellite data and in situ measurements,
- Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies (FAST DANUBE),
- Integrated Solutions for Bed Load Management (ISOBEL)
- Fishfriendly Innovative Technologies for Hydropower (FITHYDRO)
- Danube Sediment Management – Restoration of the Sediment Balance in the Danube River (DanubeSediment)
- Reducing the flood risk through floodplain restoration along the Danube River and tributaries (DanubeFloodplain)
- Masterplan for Preservation and Consolidation of Biodiversity along the Bavarian Danube
- Analysis of biological methods of ecological status assessment for phytobenthos, macrophytes and macrozoobenthos in the European intercalibration river types of the Pannonian ecoregion - Analysis of the influence of environmental factors and anthropogenic pressures on biological quality elements
- Assessment of habitat quality and presence of invasive alien species in aquatic ecosystems of the Danube Delta and Kilia Delta
- Climate-induced restructuring of the hydrobionts communities and their impact on ecological state and biological productivity of the transboundary with EC rivers of Ukraine
- Forecast and prevention of negative effects of climate change on the ecological status, potential and biodiversity of hydro ecosystems of Ukraine
- Mechanisms of interaction of hydrobiocenoses and formation of biodiversity of transitional waters of the lower reaches of the Danube
- Integrated transnational policies and practical solutions for an environmentally–friendlier inland water transport system in the Danube Region (Green Danube Project)
- Facilitating the development of sustainable tourism in the Danube region along EuroVelo routes (EuroVeloTour).
- Potential threats to environmental and economic sustainability in the Danube and Black Sea region: Danube River as invasive alien species corridor
- Increasing understanding of alien species through citizen science (COST Action Alien CSI)

IAD members contribute also to the preparation of two European research infrastructure projects (ESFRI): (1) the development of the eLTER (“Long-Term Ecological Research”) research infrastructure that was recently accepted on the 2018 ESFRI roadmap, (2) the development of the several supersites in the envisaged “Danubius” RI.

Additional cooperation is developed with the support of the Academies of Sciences from the Danube countries (e.g. the bilateral project funded by the Hungarian and Bulgarian Academies or the Youth Academic Project funded by the Bulgarian Academy) or by bilateral programs between the research organizations. The CEEPUS Network EcoManAqua, coordinated by BOKU Vienna, has an important

role in connecting IAD partner institutions from AT, BG, RO, HR with other universities and research units throughout Europe.

IAD experts also support national authorities by preparing and implementing projects in line with the European, regional or local policy. Such projects refer to the development of Croatian national classification system for the water-quality assessment procedure, in accordance with the EU Water Framework Directive, or those supporting the Danube Delta Biosphere Reserve Administration concerning the revision of the management plan, monitoring system and hydraulic modelling in the Danube Delta, improvement of hydrological conditions in different aquatic systems, improvement of the conservation status for endangered species and habitats, development of a monitoring station for migratory fish, etc.

Editorial activities and publications

Dissemination of scientific information to experts, policy stakeholders and the wide public represent another important part of IAD activity.

The IAD Bulletin, Danube News, represent an important communication tool of the scientific information towards the wide public. It includes short articles on significant achievements in the aquatic research carried out in the Danube Basin, but also policy notes presenting relevant aspects for the region. Two Danube News issues were published in 2018 (DN 37 and DN 38) and are available for download on the IAD website (www.danube-iad.eu).

A synthesis about the long-term restoration of Alte Donau lake, an oxbow lake of the Danube River near Vienna, a book on macrophytes in the Danube River Basin, a book on riverine ecosystem management and one presenting the hydrobiocenoses of the transboundary sections of the Ukrainian and Romanian parts of the Danube Delta were published in 2018.

Scientific articles emerging from the research activities carried out in the Danube Basin have been published also in 2018. A selection of the most relevant titles (articles, books, proceedings) are available on the IAD website, with links included for download.

Other activities

In 2018, IAD contributed to the organization of the **IAD International Conference** (Smolenice, Slovakia) and **two major regional meetings**:

-FAO Regional Conference on river habitats restoration for inland fisheries in the Danube Region and the adjacent Black Sea area, bringing together water and fishery authorities and experts to discuss about joint challenges and solutions (<http://eurofish.dk/danube-conference/>)

-Joint ESENIAS and DIAS Conference 'Management and sharing of IAS data to support knowledge-based decision making at regional level'

Involvement of citizens in activities related to hazard identification and risk modelling is on-going via the establishment of Citizen Observatories.

The IAD members are involved also in **education activities**, such as coordination of PhD programs and master theses in the affiliated universities, environmental education activities and presentations on nature conservation topics during public events.

IAD **supports travel costs** for students for attending conferences or visiting partner institutions.